

period of

Mitosis and Meiosis

Cell Division

For all organisms, the cell is the smallest unit that retains the properties of life. Each living cell has the potential to live on its own or in a complex system of interdependency. While cells vary widely in size, shape, activity, and adaptation, each cell begins life with a plasma membrane (the thin, outermost membrane that maintains the cell as a distinct entity), a region of DNA (a nucleic acid that is the molecule of inheritance), and a region of cytoplasm (the region between the plasma membrane and DNA). Additionally, all cells have the ability to go through a period of division where a parent cell divides into two daughter cells.

Cells are either prokaryotic or eukaryotic. Prokaryotic cells, which consist entirely of bacteria, are simple in the sense that they contain non-membranous organelles, lack a cell nucleus, and have only one circular chromosome of limited size. All other organisms are composed of eukaryotic cells, which are more complex as they have many membrane-bound organelles that are devoted to specialized tasks as well as a nucleus.

Given their simple structure, prokaryotic cell division is a fast process known as binary fission where the chromosome is duplicated prior to division and the two copies of the chromosome attach to opposing sides of the cellular membrane. Eukaryotic cell division, however, is a more complex, multi-step process. Mitosis and meiosis are the two division mechanisms that sort out and then package a parent cell's DNA into new nuclei for their forthcoming daughter cells. While meiosis only occurs in germ cells, mitosis allows multicelled organisms to grow, replace dead or worn-out cells, and repair tissues.

Biology: Which stage of mitosis do chromatids separate at their centromeres, with one set of chromosomes moving toward each pole?
 W) anaphase
 X) metaphase
 Y) prophase
 Z) telophase

Answer: W) anaphase

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Palm Sunday April Fool's Day	2	3 Passover (Begins at Sundown)	4	5	6 Good Friday	7
8 Easter	9	10	11	12	13	14 ACT Test
15	16	17	18	19	20	21
22 Earth Day	23	24	25	26 National Science Bowl®	27 Registration Deadline for June SAT National Science Bowl®	28 National Ocean Sciences Bowl National Science Bowl®
29 National Ocean Sciences Bowl National Science Bowl®	30 National Ocean Sciences Bowl National Science Bowl®					

april 2007

March 2007							May 2007						
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